Assessment of three different endometrial cytological sampling methods in postpartum beef cows

ABSTRACT

The aim of this study was to assess three different cytological endometrial sampling methods used to estimate polymorphonuclear leukocytes (PMN) under high power field (HPF) microscopy and to determine subclinical endometritis in postpartum beef cows. Forty beef cows aged 3-7 years were sampled at week three and four after calving by endometrial cytology methods. The cytological sampling methods used included; cotton swab (CS), cytobrush (CB) technique, and low volume flush (LVF), respectively. The mean PMN counts at the third week was higher ($p<0.01$) (12.2 cells HPF-1 than on the fourth week (4 cells HPF-1). The average PMN counts using CB alone was significantly higher (11.3 cells HPF-1) than CS (7 cells HPF-1) and LVF (6 cells HPF-1) methods. Smears from CB had more endometrial cells (58.55 cells HPF-1) at HPF, which was significantly higher ($p<0.01$) than CS and LVF methods. Both CB and CS methods yielded more intact cells (62.4 % and 61.9 %) ($p <0.01$) than LVF (52.4 %). The prevalence of subclinical endometritis in the beef cows between 22 and 28 days postpartum using a threshold value of ≥8 % by cytobrush method was 12.5%, which is considered low. In conclusion, CB method was found to be better and effective technique in comparison to other cytological methods used in obtaining endometrial cytology samples.

Keyword: Endometritis; Postpartum; Cytology; Neutrophils